ESG Ratings Simplified

WHAT THEY ARE AND WHO USES THEM

June 3, 3019
Agenda

- Introducing MSCI ESG Research
- Know Your Investors ESG Objective
- What is an ESG Rating?
- Data Sources Powering an ESG Rating
- Users of MSCI ESG Ratings
- MSCI ESG Issuer Communication
- QnA
Introducing MSCI ESG research

185+ ESG analysts\(^1\)
(325+ FTE\(^2\))

1300+ clients

46 of 50 Global asset managers\(^3\)

1000+ ESG equity & fixed income indexes use MSCI ESG Research ratings and data

MSCI voted Best firm for SRI Research, Corporate Governance Research and Indexes for the third consecutive year

\(^1\) Direct and allocated FTEs. Source: MSCI ESG Research as of April 2018
\(^2\) Includes full time employees and allocated staff performing non-investment advisory tasks
\(^3\) Based on latest P&AUM data and MSCI clients as of December 2017
ESG investing is growing dramatically…why now?

UN PRI* Has Grown to Over 1,900 Signatories with $81.7 Trillion In AUM

+63% YOY Growth YOY in ETF AUM Tracking MSCI ESG Indexes

Here’s Why:

1. INVESTORS HAVE BECOME LESS TOLERANT OF CORPORATE ESG INCIDENTS
2. INVESTORS DEMONSTRATING WILLINGNESS TO ACT
3. GREATER UNDERSTANDING OF POTENTIAL FINANCIAL BENEFIT
4. IMPROVED ESG RATINGS TO MEASURE WHAT WAS UNMEASURABLE

*United Nations Principles for Responsible Investing
Investors demonstrating willingness to act

Improved ESG Ratings produce ESG benchmarks that asset owners are willing to use for allocation.
For example: More than $180bn allocated to MSCI ESG equity & fixed income indexes since 2014\(^2\)

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tr>
<td><strong>UK EAPF</strong></td>
<td>$400m MSCI World Low Carbon Target Index</td>
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<td><strong>CalSTRS</strong></td>
<td>Committed $2.5bn to MSCI ACWI Low Carbon Target Index</td>
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<td><strong>GPIF</strong></td>
<td>Commenced with 3% of domestic equity MSCI Japan ESG Select Leaders Index + MSCI Japan Empowering Women</td>
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<tr>
<td><strong>Swiss Re</strong></td>
<td>$130bn Active listed equity and credit MSCI ESG Leaders + Bloomberg Barclays MSCI Corporate Sustainability</td>
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<td><strong>EPF of Malaysia</strong></td>
<td>$5bn MSCI Custom Ethical Index</td>
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<tr>
<td><strong>Ontario Teachers Pension Fund</strong></td>
<td>MSCI ACWI Ex Canada Ex Tobacco policy benchmark</td>
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<tr>
<td><strong>AP4</strong></td>
<td>Targeting 100% of equity portfolio allocation by 2020 MSCI Low Carbon indexes</td>
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<td><strong>Taiwan BLF</strong></td>
<td>$2.4bn MSCI ACWI ESG Factor Mix Index</td>
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<td><strong>AMF</strong></td>
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<td><strong>New Zealand Super</strong></td>
<td>40% of passive equity portfolio MSCI custom Low Carbon Index</td>
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<td><strong>Migros</strong></td>
<td>$4.5bn MSCI ACWI ex China ESG Universal</td>
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1 Source: Morgan Stanley, 2017 Sustainable Signals
2 Based on publicly available information in press releases published from 2014 to date.
Investors less tolerant of corporate ESG incidents

30 years ago, Exxon’s stock price barely moved when Exxon Valdez spilled 11mm gallons of oil on the Alaskan shore.* Today, with social media allowing for immediate, global communication of issues, investors are making companies accountable for their actions.

Recent Examples of Companies Whose Share Prices Dropped Dramatically Following ESG Incidents

- **EQUIFAX – SEP 2017**  
  -25%

- **BP – APR 2010**  
  -30%

- **VALEANT – OCT 2015**  
  -71%

- **VOLKSWAGEN – SEP 2015**  
  -30%

- **TEPCO – MAR 2011**  
  -87%

*Source: https://www.fool.com/investing/general/2014/03/24/25-years-on-from-exxon-valdez-what-weve-learned-wh.aspx; Examples only. Past performance is not indicative of future results, which may differ materially.
Greater understanding of the financial benefit

How markets price ESG

Study based on MSCI World universe from 2007 to 2017.

Fundamental factor analysis

- Company profitability
  - Higher profitability
  - More stable earnings
  - Higher Dividend yield

- Idiosyncratic risk
  - Lower incident frequency
  - Lower residual volatility
  - Lower draw-downs

- Systematic risk
  - Lower common factor risk
  - Lower Beta
  - Lower cost of capital

Controlling for other factors

AAA
MSCI ESG Ratings
CCC

Profitability

Idiosyncratic risk

Systematic risk
KNOW YOUR INVESTOR’S ESG OBJECTIVE
Align investor objectives with investment design

Incorporating ESG into investment strategy or creating products typically starts with understanding client objectives, which may combine elements of managing long-term risk, reflecting values and positive impact.

Investment Objectives

- Financial returns
- ESG criteria

Integration

Incorporate ESG criteria to enhance long-term return, manage ESG financial risk

Individual Objectives

Values

- Values & Preferences
- Financial Returns

“Our investments should reflect our clients’ values”

Impact

- Values & Preferences
- Financial Returns

“`We want our investments to make a difference in the world”`

- Align portfolio with investor’s ethical or political values
- Generate measurable social or environmental benefits as well as financial returns

“Incorporating ESG may improve our investment results”
ESG investment objectives drive investor's ESG data deeds

ESG investment toolbox is varied in order to address the full spectrum of investor needs

MSCI ESG RESEARCH

- ESG INTEGRATION
- ESG RATINGS
  - Deep governance assessment
  - Focus on most relevant ESG factors by industry
  - Focus on risk exposure, not just corporate disclosure
  - Identifies leaders and laggards (AAA-CCC)

- SCREENING - VALUES ALIGNMENT
  - BUSINESS INVOLVEMENT SCREENING
  - Identifies companies involved in business activities that may be considered controversial

- NORMS & CONTROVERSIES SCREENING
  - Assess company involvement in controversies

- IMPACT INVESTING
  - SUSTAINABLE IMPACT METRICS
  - Measures revenue exposure to companies that offer products and services that directly address environmental or social needs.
WHAT IS AN ESG RATING?
MSCI ESG rating methodology

1. Evaluate Corporate Governance
   - Identify leaders and laggards, not business type exclusion
   - Industry-Relative ESG Ratings (AAA-CCC)

2. Identify Key Issues by Industry
   - Focus on most relevant ESG factors by industry
   - Quantitative Approach + Annual Consultation

3. Score Key Issues (0-10)
   - Focus on risk exposure not just disclosure
   - Scoring Models Assess Risk Exposure + Risk Management

4. Final ESG Ratings (AAA-CCC)
   - Identify leaders and laggards, not business type exclusion
   - Industry-Relative ESG Ratings (AAA-CCC)

Analysis begins with a deep governance assessment
- Ownership, Board, Pay, Accounting, Corporate Behavior

Focus on most relevant ESG factors by industry
- Quantitative Approach + Annual Consultation

Focus on risk exposure not just disclosure
- Scoring Models Assess Risk Exposure + Risk Management

Sources: MSCI ESG Research

COMPANY, INDUSTRY, AND THEMATIC REPORTS

RATINGS, SCORES AND DATA

PORTFOLIO ANALYTICS & ESG INDEXES

MSCI
Understanding governance and management

MANAGEMENT CAPACITY TO MINIMIZE EXPOSURE TO LONG-TERM SYSTEMATIC RISK FACTORS

MANAGEMENT CAPACITY TO MINIMIZE EXPOSURE TO SHORT-TERM IDIOSYNCRATIC RISKS

WEATHER PATTERNS  WATER SCARCITY
DATA SECURITY  DEMOGRAPHIC SHIFTS

GOVERNANCE STRUCTURES
CORPORATE BEHAVIOR
STRATEGY
RESULTS
POLICIES

FRAUD  ACCIDENTS
STRIKES  SHUTDOWN
ESG ratings focus on **most relevant ESG factors by industry**

**INDUSTRY-SPECIFIC**

<table>
<thead>
<tr>
<th>ENVIRONMENTAL (E)</th>
<th>SOCIAL (S)</th>
<th>GOVERNANCE (G)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Climate Change</strong></td>
<td><strong>Human Capital</strong></td>
<td><strong>Corporate Governance</strong></td>
</tr>
<tr>
<td>Carbon Emissions</td>
<td>Labor Management Health &amp; Safety</td>
<td>Board Pay Ownership Accounting</td>
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<tr>
<td>Product Carbon Footprint</td>
<td><strong>Corporate Behavior</strong></td>
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<tr>
<td>Financing Environmental Impact</td>
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<td></td>
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<tr>
<td>Climate Change Vulnerability</td>
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<tr>
<td><strong>Natural Capital</strong></td>
<td><strong>Product Liability</strong></td>
<td></td>
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<tr>
<td>Water Stress</td>
<td>Product Safety &amp; Quality</td>
<td></td>
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<tr>
<td>Biodiversity &amp; Land Use</td>
<td>Chemical Safety</td>
<td></td>
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<tr>
<td>Raw Material Sourcing</td>
<td>Financial Product Safety</td>
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<tr>
<td><strong>Pollution &amp; Waste</strong></td>
<td><strong>Stakeholder Opposition</strong></td>
<td></td>
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<tr>
<td>Toxic Emissions &amp; Waste</td>
<td>Community Relations*</td>
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<tr>
<td>Packaging Material &amp; Waste</td>
<td>Controversial Sourcing</td>
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<tr>
<td>Electronic Waste</td>
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<tr>
<td><strong>Environmental Opportunities</strong></td>
<td><strong>Social Opportunities</strong></td>
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<tr>
<td>Clean Tech</td>
<td>Access to Communications</td>
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<tr>
<td>Green Building</td>
<td>Access to Finance</td>
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<tr>
<td>Renewable Energy</td>
<td>Access to Health Care</td>
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<td></td>
<td>Nutrition &amp; Health</td>
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</tbody>
</table>

*Proposed in 2019 ESG Ratings Consultation*
Selecting significant key issues by industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>CARBON EMISSIONS t CO2e / $M</th>
<th>WATER STRESS m³ / $M</th>
<th>HEALTH &amp; SAFETY fatalities per 1m workers</th>
<th>BRIBERY &amp; ETHICS # of active controversies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>1853</td>
<td>79</td>
<td>0.29</td>
<td>53</td>
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<tr>
<td>Energy</td>
<td>550</td>
<td>26</td>
<td>0.09</td>
<td>42</td>
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<tr>
<td>Materials</td>
<td>1270</td>
<td>44</td>
<td>0.09</td>
<td>46</td>
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<tr>
<td>Cons. Staples</td>
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<td>25</td>
<td>0.09</td>
<td>96</td>
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<td>Industrials</td>
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<td>Telecom</td>
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<td>Info Tech</td>
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<td>Financials</td>
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**Notes:**
- CARBON EMISSIONS: t CO2e / $M
- WATER STRESS: m³ / $M
- HEALTH & SAFETY: fatalities per 1m workers
- BRIBERY & ETHICS: # of active controversies
Evaluating key issue performance

- Type of operations
- Location of operations
- Size of operation, etc

Level of Exposure

- Policies & commitments
- Programs & initiatives
- Performance indicators
  - Controversies

Management Capacity

EVALUATE MANAGEMENT STRATEGY IN THE CONTEXT OF RISK OR OPPORTUNITY EXPOSURE
Assessing ESG risk exposure

Example:

**Kaz Minerals**

<table>
<thead>
<tr>
<th>MINE NAME:</th>
<th>Aktogay</th>
<th>Bozshakol</th>
<th>Bozymchak</th>
<th>East Region Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Operations</td>
<td>29%</td>
<td>11%</td>
<td>2%</td>
<td>57%</td>
</tr>
</tbody>
</table>

**GEOGRAPHIC**

<table>
<thead>
<tr>
<th>WATER BASIN</th>
<th>Kazakhstan Balkhash</th>
<th>Kazakhstan Pavlodar</th>
<th>Kazakhstan Aral</th>
<th>Kazakhstan Ob</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER STRESS</td>
<td>SEVERE</td>
<td>MEDIUM</td>
<td>SEVERE</td>
<td>LOW</td>
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</tbody>
</table>

**BUSINESS ACTIVITY**

<table>
<thead>
<tr>
<th>BUSINESS ACTIVITY</th>
<th>Copper</th>
<th>Copper</th>
<th>Gold</th>
<th>Copper/Zinc</th>
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<tbody>
<tr>
<td>WATER INTENSITY</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
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<tr>
<td></td>
<td>5.99</td>
<td>5.99</td>
<td>6.03</td>
<td>6.07</td>
</tr>
</tbody>
</table>

**Iluka Resources**

<table>
<thead>
<tr>
<th>MINE NAME:</th>
<th>Eucla</th>
<th>Murray</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Operations</td>
<td>34%</td>
<td>20%</td>
<td>44%</td>
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</table>

**GEOGRAPHIC**

<table>
<thead>
<tr>
<th>WATER BASIN</th>
<th>Australia Eucla</th>
<th>Australia Murray</th>
<th>Australia Perth</th>
</tr>
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<td>WATER STRESS</td>
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<td>MEDIUM</td>
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<td>BUSINESS ACTIVITY</td>
<td>Heavy Minerals</td>
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<td>Heavy Minerals</td>
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<tr>
<td>WATER INTENSITY</td>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH</td>
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<td>6.44</td>
<td>6.44</td>
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</table>

Assessing risk management

POLICIES AND OVERSIGHT
ex: Highest Level of Water Oversight

TARGETS AND PROGRAMS
ex: Water Reduction Targets

PERFORMANCE METRICS
ex: Water Withdrawal Intensity

Management data points inform risk mitigation

Controversies Deduction
(-5 – 0)

Company data as of May 2016. Source: MSCI ESG Research
How this fits into the ESG rating

- Industry-relative ESG ratings based on company performance on industry key issues
- Weights set according to underlying exposure metrics

- ESG Letter Rating (AAA-CCC)
- Final Industry Adjusted Score (0-10)
- Weighted Average Key Issue Score (0-10)

- Environment Pillar Score (0-10)
- Social Pillar Score (0-10)
- Governance Pillar Score (0-10)

- Environment Key Issue Scores (0-10)
- Social Key Issue Scores (0-10)
- Governance Key Issue Scores Score (0-10)

- Exposure Scores
  - Indicators: Business Segments; Geographic Segments; Co-spec indicators
- Mgmt Scores
  - Indicators: Strategy Programs & Initiatives Performance Controversies

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- Mgmt Scores
  - Indicators: Strategy Programs & Initiatives Performance Controversies

- OPPORTUNITIES IN GREEN BUILDING
- PRODUCT QUALITY & SAFETY
- HEALTH & SAFETY
- HUMAN CAPITAL DEVELOPMENT
- CORPORATE GOVERNANCE
- CORRUPTION & INSTABILITY
DATA SOURCES POWERING AN ESG RATING
Commitment to public data

- Only use publicly available information. No confidential data.
- Traceability of information is highly important.
- **No** stock questionnaires. **No** general interviews.

**MSCI ESG DATA SOURCES:**
- 100 + specialized datasets [government, NGO, proprietary models]
- Company disclosure [10-K, sustainability report, proxy report]
- 1,600+ global and local media sources monitored daily
Alternative data helps to deliver key insights

**Used directly in ESG products**
- GHG Emissions by co. facilities
- Env. and Social Regulations
- Water stress levels per basin
- Recalls and warning letters
- Data breach cost per capita
- Corruption Perception Index
- Consumer Protection Agencies
- Geo-location (raw)
- Google Search Trends
- Labour bureau, employee salary
- Brand visibility
- Fuel efficiency standards

**Exploratory**
- Satellite images
- Twitter
- Job postings
- Employer ratings
- Social media
- Supply chain
- Transactions
- Private assets
- Earnings calls transcripts
- Emerging ESG Issue relevance

**CASE STUDY:** Water Stress Risk for Companies in Selected GICS Sub-Industries based on their locations

**PROBLEM**
Corporate disclosure is often insufficient. *Is there a better way to measure risk?*

**APPROACH**
Alternative data sources can yield insights. E.g. mapping company's assets/facilities to water stress risk.

2,434 constituents of the MSCI ACWI Index as of November 30, 2017
Source: MSCI ESG Research

*Grey dot gradients represents individual mining companies*
Granular risk exposure analysis leveraging alternative data

**EXPOSURE DERIVED FROM COMPANY DISCLOSURE**

<table>
<thead>
<tr>
<th>REGION</th>
<th>% OF ASSETS</th>
<th>WATER RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANADA, UK</td>
<td>10%</td>
<td>LOW</td>
</tr>
<tr>
<td>USA</td>
<td>90%</td>
<td>HIGH</td>
</tr>
<tr>
<td><strong>TOTAL GEOGRAPHIC WATER RISK</strong></td>
<td></td>
<td><strong>7.2</strong></td>
</tr>
</tbody>
</table>

**COMPANY DISCLOSURE COMPLEMENTED WITH ALTERNATIVE INSIGHT**

<table>
<thead>
<tr>
<th>FACILITY OR REGION</th>
<th>STATE</th>
<th>% OF US ASSETS</th>
<th>WATER RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONALDSONVILLE NITROGEN COMPLEX</td>
<td>Louisiana</td>
<td>49%</td>
<td>LOW</td>
</tr>
<tr>
<td>YAZOO CITY FACILITY</td>
<td>Mississippi</td>
<td>14%</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>PORT NEAL NITROGEN COMPLEX</td>
<td>Iowa</td>
<td>8%</td>
<td>LOW</td>
</tr>
<tr>
<td>TERRA INTERNATIONAL (OKLAHOMA) INC</td>
<td>Oklahoma</td>
<td>8%</td>
<td>HIGH</td>
</tr>
<tr>
<td>VERDIGRIS PLT</td>
<td>Oklahoma</td>
<td>22%</td>
<td>HIGH</td>
</tr>
<tr>
<td>CANADA, UK</td>
<td></td>
<td>24%</td>
<td>LOW</td>
</tr>
<tr>
<td><strong>TOTAL GEOGRAPHIC WATER RISK</strong></td>
<td></td>
<td><strong>4.4</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: MSCI ESG Research, WRI Aqueduct, US EPA. Company data as of March 2018
USERS OF ESG RATINGS
How our clients use MSCI ESG ratings

- Fundamental / Quant Analyses
- Portfolio Construction / Risk Management
- Engagement & Thought Leadership
- Benchmarking / Index-based Product Development
Stakeholders pressure issuers to address ESG risks

1. Enhance transparency on ESG issues
2. Integrate ESG risk management in business models

- Investors
- Regulators
- Civil Society
- Customers
Response Rate: MSCI ESG Research Footprint Growing Among Issuers

MSCI ACWI Index - Overall Inbound Communication Rate

Source: MSCI ESG Research
MSCI issuer communications model

- **INDEPENDENCE**
  - No solicited ESG Rating
  - Dedicated team focusing solely on issuers’ communications

- **CONSISTENCY**
  - Systematic outreach to all companies
  - Standard data review process

- **TRANSPARENCY**
  - Logging of all interactions with issuers
  - Availability of MSCI ESG Research assessment and underlying data to companies at no cost

SUPPORT INVESTORS IN INTEGRATING ESG ISSUES IN THEIR INVESTMENT PROCESS THROUGH ISSUER COMMUNICATIONS DUE DILLIGENCE EFFORTS
Standard ESG ratings data verification process

- Companies are alerted via email to the upcoming ESG Ratings update: ~6-8 weeks prior to scheduled update.
- Companies are invited to share comments and data updates while analysts are actively updated the ESG Ratings assessment. A deadline to provide feedback will be communicated. We do not share draft reports.
- Companies are notified via email that the ESG Ratings update is complete.
- Companies are welcomed to communicate with MSCI ESG Research at any time during the year to submit queries or update relevant data.

*MSCI only uses public information*
Typical Issuer Interaction

Issuer

Issuer Portal

Issuer Comms Team

Data Review Outreach
Access to Research Reports
Education
Resource Library
Issuer Events

Feedback Queries

MSCI ESG Research

Analyst Team

Ratings
Governance
Carbon
Controversies
Industry experts
Exposure
Models

Data and report updates
195+ analysts providing inputs & insights

Specialized Subject Teams provide inputs into Rating model:

- Exposure specialists: 10
- Carbon specialists: 10
- Governance specialists: 29
- Controversies specialists: 25
- Business segment specialists: 25

Diverse professional backgrounds ranging from former portfolio managers and policy specialists to supply chain auditors and energy engineers.

- 25 languages
- >50% Advanced degrees
- 10 yrs Average professional experience

70 ESG Sector Analysts add Industry, Country and Company expertise, providing insights on key risks and opportunities.

On average, analysts will contribute to the rating and report of any given company.

MSCI
What are issuers saying?

**Common Issuer Challenges**

- We are seeking greater transparency into the metrics that drive our MSCI ESG Research assessments.
- We appreciate that MSCI does not send questionnaires, but the process to data review can sometimes still be onerous.
- We would love more direct access to the analysts team.

**What MSCI is doing**

- MSCI ESG Research is building a library of issuer resources on methodology and ESG investing, including FAQs and data point definitions.
- The new ESG Issuer Communications Portal aims to bring efficiency a more user-friendly experience to the feedback process.
- We are increasing the number of issuer-focused events that will connect our analyst experts more directly with the issuer community in a more scalable way.
MSCI ESG Research is developing an online platform fully dedicated to issuers:

- Phase 1: Dedicated website for issuers to access their own report and information on ESG (Live)
- Phase 2: Dedicated platform for issuers allowing for interaction with MSCI ESG Research (2019)

https://esgicp.msci.com

**THIS PLATFORM ALLOWS YOU TO:**

- **DOWNLOAD YOUR RATINGS**
  - Access your MSCI ESG Research reports at no cost

- **REPORT**
  - No questionnaires or surveys required

- **LEARN MORE ABOUT ESG**
  - Access our FAQs and free library of additional ESG resources

**AND GAIN INSIGHT INTO:**

- **WHO IS MSCI?**
  - More than $14.8 trillion in equity assets benchmarked to MSCI Indexes

- **WHAT IS ESG INVESTING?**
  - Institutional investors are increasingly considering ESG factors in their investments

- **HOW TO CONTACT US?**
  - A dedicated global team for issuer communications

Contact Us: esgissuercomm@msci.com

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1As of June 30, 2018, as reported on September 30, 2018 by eVestment, Morningstar and Bloomberg.
Q & A
MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 45 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process. To learn more, please visit www.msci.com.
# Contact us

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<th>AMERICAS</th>
<th>EUROPE, MIDDLE EAST &amp; AFRICA</th>
<th>ASIA PACIFIC</th>
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<tbody>
<tr>
<td>Americas</td>
<td>+1 888 588 4567 *</td>
<td>Cape Town +27 21 673 0100</td>
<td>China North 10800 852 1032 *</td>
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<tr>
<td>Atlanta</td>
<td>+1 404 551 3212</td>
<td>Frankfurt + 49 69 133 859 00</td>
<td>China South 10800 152 1032 *</td>
</tr>
<tr>
<td>Boston</td>
<td>+1 617 532 0920</td>
<td>Geneva +41 22 817 9777</td>
<td>Hong Kong +852 2844 9333</td>
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<tr>
<td>Chicago</td>
<td>+1 312 675 0545</td>
<td>London + 44 20 7618 2222</td>
<td>Mumbai +91 22 6784 9160</td>
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<tr>
<td>Monterrey</td>
<td>+52 81 1253 4020</td>
<td>Milan +39 02 5849 0415</td>
<td>Seoul 00798 8521 3392 *</td>
</tr>
<tr>
<td>New York</td>
<td>+1 212 804 3901</td>
<td>Paris 0800 91 59 17 *</td>
<td>Singapore 800 852 3749 *</td>
</tr>
<tr>
<td>San Francisco</td>
<td>+1 415 836 8800</td>
<td></td>
<td>Sydney +61 2 9033 9333</td>
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<tr>
<td>São Paulo</td>
<td>+55 11 3706 1360</td>
<td></td>
<td>Taipei 008 0112 7513 *</td>
</tr>
<tr>
<td>Toronto</td>
<td>+1 416 628 1007</td>
<td></td>
<td>Thailand 0018 0015 6207 7181 *</td>
</tr>
</tbody>
</table>

• = toll free

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clientservice@msci.com
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Key issue selection
Water stress

Water Intensity Data Sources: Company data from MSCI ESG Research, IERS Comprehensive Environmental Data Archive, Canadian Industrial Water Survey
## CALCULATING Key Issue Weights

### Key Issue Weights Are Based On:
- Industry’s contribution to externality vs. other industries
- Time horizon of risk factor for that industry
- Number and significance of other issues assessed

<table>
<thead>
<tr>
<th>Time Horizon</th>
<th>Issue</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Term</strong> (&lt;2 years)</td>
<td>Chemical Safety</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Supply Chain Labor Standards</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Medium Term</strong> (2-5 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low Contribution to Externality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate Contribution to Externality</td>
<td></td>
</tr>
<tr>
<td><strong>Long Term</strong> (&gt;5 years)</td>
<td>Product Carbon Footprint</td>
<td>15%</td>
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<tr>
<td></td>
<td>Raw Material Sourcing</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Corporate Governance</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: MSCI ESG Research
ESG Controversies

Screen out violators | Engage issuers | Monitor emerging problems

- Biodiversity and Land Use
- Energy and Climate Change
- Impact of Products & Services
- Supply Chain Management
- Toxic Emissions & Waste
- Operational Waste
- Water Stress

- Human Rights
- Political Conflict
- Labor Relations
- Supply Chain Labor Issues
- Civil Liberties
- Product Safety
- Privacy & Data Security
- Impacts on Communities

- Bribery and Corruption
- Accounting Scandals
- Fraud

- Executive Compensation
- Governance Structures
- Controversial Investments

MSCI
MSCI ESG Sustainable Impact metrics

17 SDGs applicable to a broad set of stakeholders

5 Actionable Impact Themes applicable to institutional investors

<table>
<thead>
<tr>
<th>OVERALL</th>
<th>BASIC NEEDS</th>
<th>EMPOWERMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social impact</td>
<td>Nutrition</td>
<td>SME finance</td>
</tr>
<tr>
<td>Major diseases treatment</td>
<td>Sanitation</td>
<td>Education</td>
</tr>
<tr>
<td>Affordable real estate</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>OVERALL</th>
<th>CLIMATE CHANGE</th>
<th>NATURAL CAPITAL</th>
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</thead>
<tbody>
<tr>
<td>Environmental impact</td>
<td>Alternative energy</td>
<td>Sustainable water</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>Green building</td>
<td>Pollution prevention</td>
</tr>
</tbody>
</table>
By design, ESG indexes under the integration category maintain the key characteristics of their parent free-float market capitalization benchmarks.